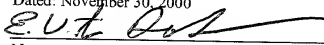


526 Rec. 11-05-08 30 NOV 2006
09/701760

FORM PTO-1390 (REV. 10-95)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER PC10433A
TRANSMITTAL LETTER TO THE UNITED STATES PATENT AND TRADEMARK OFFICE DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) filed herewith via EXPRESS MAIL LABEL EE 645346652 US
INTERNATIONAL APPLICATION NO. PCT/US00/04733	INTERNATIONAL FILING DATE February 25, 2000	PRIORITY DATE CLAIMED February 26, 1999	
TITLE OF INVENTION METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS			
APPLICANT(S) FOR DO/EO/US Harold N. CONKLE; Joseph E. SCHULTZ; Scott J. BLONIGEN; Fred H. WEBER; David R. KILANOWSKI; Bruce MONZYK; Timothy M. WERNER; Chad M. CUCKSEY; Hamish A.I. McARTHUR; and Ted L. TEWKSBURY Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is the FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is the SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input checked="" type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)) 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) In Unexecuted Form Only 10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)) 			
Items 11. To 16. Below concern other documents(s) or information included:			
<ol style="list-style-type: none"> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98 with Form A820/1449; copies of 8 references. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input type="checkbox"/> Other items or information: Copy of International Search Report Copy of Invitation to Pay Additional Fees -- for Multiple Inventions Applicants "Response to Pay Additional Fees" for Multiple Inventions Certificate of Mailing via Express Mail EE 645346652 US Return Receipt Postcard 			

U.S. APPLICATION NO. (If known, see 37 CFR 1.5) not yet assigned 09/701760		INTERNATIONAL APPLICATION NO PCT/US00/04733		ATTORNEY'S DOCKET NUMBER PC10433A	
17. <input checked="" type="checkbox"/> The following fees are submitted BASIC NATIONAL FEE (37 CFR 1.492 (a)(1)-(5)): <input type="checkbox"/> Search Report has been prepared by the EPO or JPO.....\$860.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37CFR 1.482).....\$690.00 <input type="checkbox"/> No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$710.00 <input checked="" type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$1000.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....\$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
				1000.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total Claims	27 - 20 =	7	X \$ 18.00	\$126	
Independent Claims	2 - 3 =	0	X \$ 80.00	\$0	
MULTIPLE DEPENDENT CLAIM(s) (if applicable)			+ \$270.00	\$0	
TOTAL OF ABOVE CALCULATIONS =				\$126	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed. (Note: 37 CFR 1.9, 1.27, 1.28)				\$	
SUBTOTAL =				\$1126.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).					
TOTAL NATIONAL FEE =				\$1126.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	
+					
TOTAL FEES ENCLOSED =				\$1126.00	
				Amount to be: Refunded	\$
				Charged	\$1126.00
a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. 16-1445 in the amount of \$ <u>1126.00</u> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 16-1445. A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Paul H. Ginsburg, Esq. Pfizer Inc Legal Department 235 East 42nd Street, 20th floor New York, NY 10017-5755					
				Dated: November 30, 2000  Name E. Victor Donahue Registration Number 35,492	

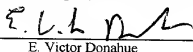
09/701760

Attorney Docket No.PC10433A

525 Rec'd PCT/PTO 30 NOV 2000

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail in an envelope addressed to: Assistant Commissioner for Patents, Box PCT, Washington, D.C. 20231 on this 30 day of November 2000.

By


E. Victor Donahue

(Typed or printed name of person)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Conkle et al.

:

Examiner: Not Yet Assigned

APPLICATION NO.: Express Mail Label EE
645346652 US

:

Group Art Unit:Not Yet
Assigned

FILING DATE: November 30, 2000

:

TITLE: Method for the Purification,
Recovery, and Sporulation of Cysts and
Oocysts.

:

Assistant Commissioner for Patents, Box PCT
Washington, D.C. 20231

Sir:

Preliminary Amendment

At page 1 of the Specification, on blank line No. 2 (directly beneath the Title Sentence), please insert the following paragraph.

-- The present application is the United States national stage (35 USC 371) of International Application PCT/US00/04733, internationally filed on February 25, 2000. The present national application claims priority under 35 USC 119(e) to U.S. Provisional Application 60/122,160, filed February 26, 1999, the complete text, claims and figures of which are incorporated by reference herein, as if fully set forth. --

Respectfully submitted,

Date: 11-30-00



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Attorney for Applicant(s)
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525 Rec'd PCT/PTO 30 NOV 2000

Method For The Purification, Recovery, And Sporulation Of Cysts And Oocysts

Background of the Invention

This invention relates generally to methods for the purification, recovery, and sporulation of encysted protozoa for use in the production of vaccines. Protozoa are pathogens known to attack the gastrointestinal tract of the host. In a situation where the host has a weak or suppressed immune system, such as very young, very old, and immuno-compromised hosts, infection may be fatal. Such a loss can translate into an economic loss as well. Protozoa are present in the environment in a relatively stable cyst form, also termed an oocyst when the protozoa is a sporozoa. Upon ingestion into the host, the encysted protozoa responds to the conditions of the gastrointestinal tract and infects the host.

In order to prevent or alleviate the problem of these diseases, non-in-ovo vaccines have been developed. These vaccines typically expose the host to a low level of the protozoa in order to develop immunity in the host without causing disease. Such vaccines include a vaccine against avian coccidiosis caused from any one of a number of species of coccidia (U.S. Patent No. 5,055,292), a vaccine for cats against toxoplasma (U.S. Patent No. 5,045, 313), and vaccines for pigs and other ruminants (U.S. Patent No. 4,808,404). These vaccines are only partially effective because they must be given by gavage or applied to the water or the food of the animal. Gavage is ineffective because it requires manual vaccine introduction. Also, many chicks die due to handling. Adding the vaccine to the food or water is also ineffective as young chicks eat little directly after hatching; therefore, disease control is delayed. The result is less rapid weight gain and a longer time to reach market weight.

In order to produce the vaccine, a supply of adequately purified encysted protozoa must be obtained. Current separation and recovery techniques employ corrosive, hazardous, toxic materials. Measures must be undertaken to compensate for these materials such as extensive washing operations to remove these materials which results in low product yield. The typical method of obtaining the encysted protozoa includes obtaining a source of encysted protozoa, such as the intestines or feces of infected animals. The intestinal matter or fecal matter needs to be separated from the encysted protozoa, and a flotation method is used. Heavy media flotation or sedimentation processes have been used where the heavy media is sodium chloride (U.S. Patent No. 4,863,731) or sucrose (U.S. Patent No. 5,068,104). The heavy media is used in an aqueous mixture. Unfortunately, the use of aqueous mixtures of the heavy media can have adverse effects. For example, aqueous mixtures of sodium chloride can lead to severe equipment corrosion.

Before the encysted sporozoa can become infective, the separated oocysts must be sporulated by mild oxidation. Mild oxidation is accomplished by either placing the suspension on a shaking table or bubbling air through the suspension of the oocysts. Potassium dichromate is typically employed to suppress any unwanted microbial growth during sporulation. But, potassium

dichromate is a hazardous material. Its use creates handling and disposal problems. Its removal results in reduced yield and increased costs.

A final bleaching step using sodium hypochlorite is used to eliminate any remaining organic material and undesired microorganisms. The bleached encysted protozoa must be washed to reduce the residual bleaching agent concentration to an acceptable level. Washing is accomplished by a series of dilutions and oocyst recovery operations to reduce the bleaching agent levels while producing an oocyst concentrate. The final encysted protozoa concentrate is made into a vaccine under sterile conditions. Each vaccine may include multiple species of protozoa to provide the greatest amount of protection possible.

A need exists for a more efficient vaccination method. Such a vaccination method would employ a live vaccine dosed at a level sufficient to generate an immuno-response to build immunity but low enough not to cause acute symptoms. For example, an in-ovo vaccine against avian coccidiosis can shorten treatment times and allow a more uniform dosage. This method could also be used to collect and produce human vaccines for protection against protozoa including *Cryptosporidium* and *Giardia lamblia*. The method would employ a non-corrosive dense media flotation process or a gas flotation process that eliminates the need for salt entirely. This improved method would not use a hazardous biocide such as potassium dichromate. Such an alternative biocide or oxidant could also double as a bleaching agent, eliminating another step in the process and another hazardous compound.

Summary of the Invention

The present invention is directed to a method for the purification and recovery of encysted protozoa, including separating the encysted protozoa from a suspension containing the encysted protozoa by either a salt flotation process where the salt is salts such as sodium sulfate, magnesium sulfate, magnesium chloride, calcium chloride, or mixtures thereof, or a gas flotation process.

In one embodiment, the method of separating the encysted protozoa is accomplished by a salt flotation process and the salt is sodium sulphate. In this embodiment, the method includes preparing an admixture comprising the encysted protozoa and the sodium sulphate, centrifuging the slurry and recovering a supernatant therefrom, forming a dilution of the supernatant and centrifuging the dilution, and recovering the concentrate from the centrifuged dilution. This embodiment may also include homogenizing the admixture by high intensity homogenization. The sodium sulphate is present in the admixture in an amount from about 3 to about 30 weight percent. Further, the specific gravity of the dilution may be less than the specific gravity of the encysted protozoa. The concentrate comprises from about 1×10^4 to about 1.5×10^6 encysted protozoa/ml.

In another embodiment, separation of the encysted protozoa is accomplished by the gas flotation process. The gas flotation process includes adjusting the suspension to a pH sufficient to affect adhesion between bubbles of the gas in the suspension and the encysted protozoa, conditioning the pH adjusted suspension by adding a sufficient amount of a surface active agent

compound to selectively coat particles in the suspension and a sufficient amount of a heteropolar compound to produce a stable froth, passing the conditioned suspension through at least one gas flotation cell, and recovering the encysted protozoa from the gas flotation cell. Suitable gases include air. When the gas is air, the pH can be adjusted to about 2.5 to about 3.5. The surface active agent compounds include a sodium salt of long-chain alkyl hydrogen sulfate, a quaternary ammonium compound, a blend of a fatty ammonium acetate and 2-ethylhexanol, an ester/amide compound, an alkyloxy polyethylenoxyethanol, and mixtures thereof. The heteropolar compounds include amyl alcohols, butyl alcohols, terpinols, cresols, and mixtures thereof. Suitable gas flow rates for the gas flotation cell range from about 0.25 to about 1.1 volumes of gas per volume of suspension per minute. In a preferred embodiment, the gas flotation cell comprises at least two serial gas flotation units, and these units can have different gas flow rates.

The present invention is also directed to method for the sporulation of oocysts which includes forming an aqueous suspension of the oocysts with water and hydrogen peroxide, wherein the hydrogen peroxide is present in an amount sufficient to eliminate unwanted microbiological growth, and aerating the aqueous suspension to sporulate the oocysts. The aqueous suspension may be aerated for a time period greater than about 40 hours under conditions such that the aqueous suspension during aeration has a dissolved oxygen level greater than about 80% of the saturation level at a temperature of about 22°C to about 32°C and may have an agitation level sufficient to adequately suspend all the solids. In this embodiment, the aqueous suspension include an oocyst concentration of about 10^4 to about 10^6 oocysts/ml and a hydrogen peroxide concentration of about 1,000 to about 20,000 mg/l.

In a further embodiment, the present invention covers a method for the purification, recovery, and sporulation of oocysts including separating the oocysts from a first suspension comprising the oocysts, and sporulating the separated oocysts by the methods of the present invention. Suitable oocysts are *Eimeria maxima*, *Eimeria mitis*, *Eimeria tenella*, *Eimeria acervulina*, *Eimeria brunetti*, *Eimeria necatrix*, *Eimeria praecox*, and mixtures thereof. In one embodiment, separation of the oocysts is accomplished by a sodium sulfate flotation process which includes preparing an admixture comprising the oocysts and the sodium sulphate, centrifuging the slurry and recovering a supernatant therefrom, forming a dilution of the supernatant and centrifuging the dilution, and recovering the concentrate from the centrifuged dilution.

In another embodiment, separation the oocysts is accomplished by a gas flotation process which includes adjusting the first suspension to a pH sufficient to affect adhesion between bubbles of the gas in the suspension and the encysted protozoa, conditioning the pH adjusted suspension by adding a sufficient amount of a surface active agent compound to selectively coat particles in the suspension and a sufficient amount of a heteropolar compound to produce a stable froth, passing the conditioned suspension through at least one gas flotation cell, and recovering the encysted protozoa from the gas flotation cell. This embodiment may further include adding a bleaching agent to the sporulated oocysts in an amount sufficient to inactivate residual microorganisms and eliminate residual organic matter, and bleaching the sporulated oocysts. In

another embodiment, the bleaching is conducted concurrently with the sporulation, and the bleaching agent is hydrogen peroxide. In yet another embodiment, the bleaching agent is sodium hypochlorite present in an amount from about 5,000 to about 10,000 parts per million free available chlorine, ozone present in an amount up to about 3% in air, and combinations thereof.

5 This method may further include washing the bleached oocysts by cross-flow membrane filtration to decrease the residual bleaching agent concentration to an acceptable level. In yet another embodiment, the bleaching agent is sodium hypochlorite present after washing in a concentration sufficient to suppress residual microbial growth, and the bleached and washed oocyst suspension has a concentration from about 1×10^6 to about 2.5×10^6 oocysts/ml, a maximum solids
10 size of less than about 200 microns, and sodium sulphate present in an amount sufficiently low to not interfere with the viability and infectivity of the cysts or oocysts, preferably less than about 3 percent, more preferably less than about 0.9 percent. This method may further include concentrating the bleached and washed oocysts into a sterile concentrate, combining sterile concentrates of one or more species of oocysts into a combined concentrate, and packaging the combined concentrate
15 under sterile conditions.

Brief Description Of The Drawings

Fig. 1A is a flow chart illustrating embodiments of a first portion method of the present invention;

20 Fig. 1B is a flow chart illustrating embodiments of a second portion method of the present invention;

Fig. 2 is a plot showing oocyst concentration verses sodium sulfate concentration;
and

25 Fig. 3 is a plot showing sporulation percent verses time after cyst harvest.

Detailed Description Of The Invention

The present method is directed to producing a concentrate of cysts or sporulated oocysts to be utilized in a vaccine. Specifically, the method is directed to producing a concentrate of sporulated avian coccidial oocysts to be used to produce an in-ovo vaccine against coccidiosis. The
30 production of a suitable and acceptable vaccine requires a multi-step treatment process constituting a plurality of unit processes. As shown in Figs. 1A and 1B, the vaccine production process can include taking a suspension of encysted protozoa, homogenizing the suspension, separating the encysted protozoa from the suspension by either salt flotation or gas flotation, sporulating the encysted protozoa if required, bleaching the sporulated encysted protozoa, washing the bleached
35 product, concentrating the encysted protozoa, combining the concentrates from multiple encysted protozoa, and sterile filling to produce a vaccine. These steps are described in further detail below.

Encysted protozoa, which includes cysts and oocysts, may be obtained from various sources including purified suspensions, intestinal linings, and fecal suspensions. Especially when the encysted protozoa are obtained from feces, the suspensions or slurries can include significant

amounts of undesirable suspended solids. For example, the suspensions can include from about 1 up to about 20 weight percent solids or feces. Preferably, the suspension includes from about 5 to about 20 weight percent solids when salt flotation is used and about 1 weight percent when gas flotation is used. In order to liberate the cysts from the associated organics in the suspension, the suspension may be subjected to a homogenization step. The suspension may be homogenized for a time period from about greater than 0 to about 5 minutes, preferably 1 minute depending upon the intensity of the homogenization. The homogenization conditions should be sufficiently intense to liberate the cysts and oocysts but gentle enough to prevent their destruction.

The encysted protozoa need to be separated from this first suspension, preferably to achieve at least about 70% encysted protozoa recovery and at least about 80% solids rejection. Typically, this results in an encysted protozoa concentration of about 1×10^4 to about 1.5×10^6 encysted protozoa/ml. Separation can be achieved by either a salt flotation process or a gas flotation process.

When a salt flotation process is used, an admixture of the unpurified encysted protozoa and the salt is prepared. Suitable salt solutions include dense solutions of water soluble salts including chlorides, sulfates, phosphates, nitrates, and acetates of ammonium, sodium, potassium, calcium, magnesium, and zinc. Suitable highly hydrogen-bonded organics including urea and the salts of guanidiene. Preferably, the salts include sodium sulfate, sodium chloride, magnesium sulfate, magnesium chloride, calcium chloride, and mixtures thereof. More preferably, the salt is sodium sulfate. These salts provide the benefit of being significantly less corrosive to the process equipment. The salt is added in an amount sufficient to produce a difference between the specific gravities of the encysted protozoa and the admixture. Preferably, the specific gravity of the encysted protozoa will be less than the specific gravity of the admixture. The salt is present in an amount from about 3 to about 30 weight percent, preferably about 14 to about 20 weight percent, more preferably about 20 weight percent.

The admixture is then subject to centrifugation and the supernatant and concentrate are collected. Depending upon the admixture conditions, the encysted protozoa can be contained in the supernatant or the concentrate. The admixture is centrifuged at about 3000 to about 15,000g, preferably 12,000g for a period of time necessary to adequately separate the encysted protozoa, typically up to about 10 minutes. For a 20% sodium sulfate solution, the encysted protozoa will be contained in the supernatant; therefore, the supernatant is collected and the concentrate or pellet is directed to waste. As shown in Fig. 2, a sodium sulfate concentration of 20% provides for a high concentration of encysted protozoa (oocysts in this case) in the supernatant (product) and only a small amount of encysted protozoa in the pellet (waste). A dilution is formed by the addition of water to the recovered supernatant. The supernatant is diluted sufficiently so that the specific gravity of the encysted protozoa is more than the specific gravity of the dilution. Therefore, the encysted protozoa will tend to settle in the dilution. For a sodium sulfate concentration of 20%, the ratio of the weight of the dilution to the weight of the supernatant is from about 4 to about 8.

The dilution is then centrifuged for a second time under comparable centrifugation conditions as in the first centrifugation, such that the residual salt concentration is less than about 10 weight percent, preferably less than about 1 weight percent, and the resulting cyst concentration is about 10^4 to 10^6 cysts/ml representing about 80 to about 95 percent recovery. The solid debris rejection rate is preferably about 90 to about 99 percent. In this embodiment, the encysted protozoa are recovered from the concentrate and the supernatant is directed to waste.

In another embodiment, separation of the encysted protozoa is accomplished by a gas flotation process. Preferably the gas is air, although any gas including oxygen and nitrogen could be used. When gas flotation is used, the pH of the suspension is adjusted to a pH sufficient to affect adhesion between the gas bubbles in the suspension and the encysted protozoa by changing the surface chemistry of the encysted protozoa. The pH is typically adjusted to a pH of about 2 to about 9, preferably about 2.5 to 3.5, more preferably about 3.

The pH adjusted suspension is additionally conditioned by the addition of a surface active agent compound, sometimes referred to as a collector compound and a heteropolar compound, sometimes referred to as a frother compound. The surface active agent compound, also termed a selective detergent, wetting agent, or emulsifier, is added in an amount sufficient to promote contact between selected solids and the gas bubbles by forming a thin coating over the particles to be floated, rendering these particles hydrophobic, while not coating other particles. Therefore, through selection of the surface active agent compound, the particles to be floated can be determined. Therefore, the encysted protozoa could be collected in a gas flotation process in which they are floated or in a reverse flotation process in which the solids to be removed are floated. Suitable surface active agents include a sodium salt of long-chain alkyl hydrogen sulfate, a quaternary ammonium compound, a blend of a fatty ammonium acetate and 2-ethylhexanol, an ester/amide compound, an alkyloxy polyethylenoxyethanol, and mixtures thereof. Preferably, the surface active agent compound is sodium lauryl sulfate. The surface active agent should be present in an amount sufficient to coat the particles to be floated. The surface active agent is present in an amount from about 0.5 to 2 lb per ton of solids in the conditioned suspension, preferably 0.5 lb per ton of solids. Alternatively, the surface active agent compound can be about 0.5 lb dodecyl amine per ton of solids which has been acidified with hydrochloric acid until a neutral pH is obtained, or about 0.5 lb potassium salt of oleic acid per ton of solids.

The heteropolar compounds are selected for their ability to change the surface tension of the water and produce stable froths. Typically, these heteropolar compounds contain one or more hydrocarbon groups attached to one polar group, with the hydrocarbon radical having upwards of 5 or 6 carbon atoms. Suitable heteropolar compounds include amyl and butyl alcohols, terpinols, cresols, and mixtures thereof. Preferably, the heteropolar compound is methyl isobutyl carbinol (MIBC) also referred to as methyl amyl alcohol and most accurately referred to as 4-methylpentanol,-2. The heteropolar compound is present in an amount sufficient to produce a stable froth. Preferably, the heteropolar compound is present in an amount up to about 2.0 lb per ton of

solids, more preferably from about 0.5 to 2.0 lb per ton of solids, most preferably about 0.5 lb per ton of solids.

The conditioned suspension is passed through a gas flotation cell and the encysted protozoa are recovered. Depending upon the pH, surface active agent compound, and heteropolar compound selected, the encysted protozoa may be floated or retained in suspension. Preferably, the encysted protozoa are floated. The gas flotation process is conducted for a period of time and at an air flow rate sufficient to recover about 20 to 100 percent, typically about 85 percent of the encysted protozoa while rejecting about 20 to 90 percent, typically 70 percent of the solid debris. The gas flotation process is conducted for a period of time of about 3 minutes to greater than about 10 minutes, preferably about 10 minutes. The gas flow rate in the air flotation cell is about 0.25 to about 1.1 volumes of gas per volume of solution per minute ("vvm"), preferably about 0.25 to about 0.83 vvm, more preferably about 0.25 to about 0.75 vvm. The gas flotation cell may include a plurality of serial flotation units. Preferably, the gas flotation cell includes at least two serial flotation units. Preferably, the flotation units are gas flotation columns. The gas flow rate in the serial flotation units may be the same or different. Preferably the gas flows are different, for example about 0.47 vvm for a 32 inch high, 2 inch diameter column and about 0.27 vvm for a 60 inch high, 2 inch diameter column.

When the encysted protozoa are oocysts or encysted sporozoa, the oocysts are sporulated. As is shown in Fig. 3, sporulation should occur as soon after harvesting the oocysts as possible, preferably, the oocysts should be sporulated within 3 days after harvest. An aqueous suspension of the oocysts and an oxidant or biocide is prepared, and the aqueous suspension is aerated for a period of time sufficient to sporulate the oocysts. If a salt flotation process was used to separate the oocysts, then the salt concentration during sporulation should be less than about 10 weight percent, preferably less than about 2 weight percent, more preferably less than about 1 weight percent. Preferably, the cyst concentration during sporulation is about 10^4 to about 10^6 oocysts/ml, more preferably about 10^5 oocysts/ml. The oocysts should be sporulated within about 1 to 24 hours after recovery of the purified cyst concentrate. The pH of the aqueous suspension should be about 5.0 to 7.0, preferably about 5.2 to 6.8. The temperature of the aqueous suspension in one embodiment is about 20 to about 33 °C, preferably about 22 to about 32 °C, more preferably about 25 to about 29 °C, most preferably about 25 °C. The aeration rate in one embodiment is about 0.1 to about 10 vvm, preferably about 0.1 to about 2.0 vvm. Overall, the agitation level should be sufficient to fully suspend all solids during sporulation but not enough to destroy the oocysts. This may occur through aeration, shaking, stirring, and combinations thereof. When stirring is used, for example, the stirring should be sufficient to keep the suspended solids in suspension but not enough to destroy the cysts or oocysts. Suitable stirring in a 6 inch diameter vessel can occur at about 121 to 204 rpm, preferably about 197 to 200 rpm, more preferably about 200 rpm. The dissolved oxygen content should be maintained at a level sufficient to permit the oocysts to sporulate, preferably about 80% of the saturation concentration at the given temperature. The time period for sporulation can be

up to about 72 hours, preferably between about 40 and about 72 hours, more preferably about 48 to about 50 hours.

The oxidant is added in a sufficient amount to inactivate the undesirable microbial growth in the aqueous suspension. Suitable oxidants, or biocides, include hydrogen peroxide, ozone, potassium dichromate, chlorine, and combinations thereof. In one embodiment, the oxidant is potassium dichromate and is present in an amount of about 2.5 v/w percent. In a preferred embodiment, the oxidant is hydrogen peroxide present in an amount from about 1,000 to about 20,000 mg/l, preferably about 5,000 mg/l. Hydrogen peroxide provides the benefit of easier and less expensive handling, and the generation of a hazardous waste by-product from this process is alleviated.

Aeration can be accomplished by either shaking on a shaker table or air sparging in a sporulation tank (e.g. fermentation tank). Preferably, aeration is accomplished in an air sparging tank because the mass transfer of air is greater, thus reducing the time for sporulation and the required size of the equipment.

Following sporulation, if necessary, the oocysts may be washed to reduce the residual oxidant concentration to an acceptable level. Hydrogen peroxide provides the benefit of eliminating the need for this step. Washing may be accomplished by serial washings, preferably, washing is accomplished by membrane filtration, more preferably by diafiltration. In the case of membrane filtration, the membrane pore size is selected to allow passage of solutes through the membrane while restricting the passage of the oocysts from one side of the membrane to the other. In one embodiment, washing is conducted with water at a transmembrane pressure of about up to about 30 psi, preferably about 20 to about 25 psi, a crossflow velocity of up to about 10 m/s, preferably about 2 m/s, and a flux through the membrane of up to about 10 l/min/m², preferably about 3 l/min/m².

The oocysts may be bleached to inactivate residual microorganisms and to eliminate residual organic matter. First, a sufficient amount of a bleaching agent is added, and then the oocysts are bleached or contacted with the bleaching agent for a sufficient period of time. The oocysts may be bleached for a period of up to 1.5 hours. Suitable bleaching agents include sodium hypochlorite, hydrogen peroxide, ozone, and mixtures thereof. The bleaching agent can be initially present in an amount of about 2,000 to about 20,000 mg/l, preferably about 8000 to about 10,000 mg/l, more preferably, 8000 mg/l. The bleaching agent should not be present in an amount sufficient to cause corrosion in the process equipment. When hydrogen peroxide is used for sporulation, bleaching and sporulation may be conducted concurrently. Following bleaching, the bleached suspension is washed, if necessary, to reduce the residual oxidant concentration to an acceptable level. When sodium hypochlorite is the bleaching agent, the acceptable level is less than about 1 mg/l. Washing can be accomplished by either serial washing or diafiltration.

The bleached suspension can be concentrated into a sterile concentration having a concentration high enough for efficient and effective handling. For example, the final concentrated encysted protozoa suspension can include a maximum solids size of less than about 200 microns,

preferably less than about 25 microns, a salt content of less than about 0.9 percent, a free residual chlorine concentration of less than about 1 mg/l but sufficient to keep residual microbial growth suppressed, and a cyst concentration of about 1×10^6 to 2.5×10^6 cysts/ml.

5 When numerous encysted protozoa or different species of one genus of encysted protozoa are to be used in a single vaccine, the sterile concentrates from the different species are combined into a single sterile concentrate. For example, the encysted protozoa can be avian coccidial oocysts including *Eimeria maxima*, *Eimeria mitis*, *Eimeria tenella*, *Eimeria acervulina*, *Eimeria brunetti*, *Eimeria necatrix*, *Eimeria praecox*, and mixtures thereof including multiple strains of each. Finally the combined concentrates are subject to filling and packaging under sterile conditions,
10 and a vaccine is produced.

Although preferred embodiments of the present invention have been described, it is understood that the present method can be used to produce other vaccines for numerous types of animal and for humans. This method could, in fact, be used to immunize humans against typical waterborne protozoa such as *Cryptosporidium* and *Giardia lamblia*. Moreover, even though the
15 entire recovery process is described, unit processes thereof may be used independently or inserted into other recovery, monitoring, or treatment schemes without departing from the scope and spirit of the present invention.

The Claims

What is claimed is:

- 5 1. A method for the purification and recovery of encysted protozoa, comprising separating the encysted protozoa from a suspension comprising the encysted protozoa by a salt flotation process wherein the salt comprises sulfates, phosphates, nitrates, acetates of ammonium, sodium, potassium, calcium, magnesium, or zinc, hydrogen-bonded organics, the salts of guanidene, or mixtures thereof, or a gas flotation process.
- 10 2. The method of claim 1, wherein separating the encysted protozoa is accomplished by a sodium sulphate flotation process which comprises:
- 15 preparing an admixture comprising the encysted protozoa and the sodium sulphate;
centrifuging the slurry and recovering a supernatant therefrom;
forming a dilution of the supernatant and centrifuging the dilution; and
recovering the concentrate from the centrifuged dilution.
- 20 3. The mixture of claim 2, further comprising:
homogenizing the admixture by high intensity homogenization.
- 25 4. The method of claim 2, wherein the sodium sulphate is present in the admixture in an amount from about 3 to about 30 weight percent.
5. The method of claim 2, wherein the specific gravity of the dilution is less than the specific gravity of the encysted protozoa.
6. The method of claim 2, wherein the concentrate comprises from about 1×10^4 to about 1.5×10^6 encysted protozoa/ml.
- 30 7. The method of claim 1, wherein separating the encysted protozoa is accomplished by the gas flotation process which comprises:
- adjusting the suspension to a pH sufficient to affect adhesion between bubbles of the gas in the suspension and the encysted protozoa;
- 35 conditioning the pH adjusted suspension by adding a sufficient amount of a surface active agent compound to selectively coat particles in the suspension and a sufficient amount of a heteropolar compound to produce a stable froth;
- passing the conditioned suspension through at least one gas flotation cell; and
recovering the encysted protozoa from the gas flotation cell.

8. The method of claim 7, wherein the gas is air.
9. The method of claim 8, wherein the suspension pH is about 2.5 to about 3.5.
- 5 10. The method of claim 7, wherein the surface active agent compound comprises a sodium salt of long-chain alkyl hydrogen sulfate, a quaternary ammonium compound, a blend of a fatty ammonium acetate and 2-ethylhexanol, an ester/amide compound, an alkyloxy polyethylenoxyethanol, or mixtures thereof.
- 10 11. The method of claim 7, wherein the heteropolar compound comprises amyl alcohols, butyl alcohols, terpinols, cresols, or mixtures thereof.
12. The method of claim 7, wherein the gas flotation cell has a gas rate from about 0.25 to about 1.1 volumes of gas per volume of suspension per minute.
- 15 13. The method of claim 7 wherein the gas flotation cell comprises at least two serial gas flotation units.
14. The method of claim 13, wherein the at least two units comprise different gas flow rates.
- 20 15. A method for the sporulation of oocysts, comprising:
forming an aqueous suspension of the oocysts with water and hydrogen peroxide, wherein the hydrogen peroxide is present in an amount sufficient to eliminate unwanted microbiological growth; and
- 25 aerating the aqueous suspension to sporulate the oocysts.
16. The method of claim 15, wherein the aqueous suspension is aerated for a time period greater than about 40 hours such that the aqueous suspension during aeration has a dissolved oxygen level greater than about 80% of the saturation level at a temperature of about 22°C to about 32°C and
- 30 with an agitation level sufficient to adequately suspend all the solids.
17. The method of claim 15 wherein the aqueous suspension comprises an oocyst concentration of about 10^4 to about 10^6 oocysts/ml and an initial hydrogen peroxide concentration of about 1,000 to about 20,000 mg/l.
- 35 18. A method for the purification, recovery, and sporulation of oocysts, comprising:
separating the oocysts from a first suspension comprising the oocysts; and
sporulating the separated oocysts by the method of claim 14.

19. The method of claim 18 wherein the oocysts are *Eimeria maxima*, *Eimeria mitis*, *Eimeria tenella*, *Eimeria acervulina*, *Eimeria brunetti*, *Eimeria necatrix*, *Eimeria praecox*, or combinations thereof .

20. The method of claim 18 wherein separating the oocysts is accomplished by a sodium sulfate
5 flotation process which comprises:

preparing an admixture comprising the oocysts and the sodium sulphate;
centrifuging the slurry and recovering a supernatant therefrom;
forming a dilution of the supernatant and centrifuging the dilution; and
recovering the concentrate from the centrifuged dilution.

10

21. The method of claim 18 wherein separating the oocysts is accomplished by a gas flotation
process which comprises:

adjusting the first suspension to a pH of sufficient to affect adhesion between
bubbles of the gas in the suspension and the encysted protozoa;

15

conditioning the pH adjusted suspension by adding a sufficient amount of a surface
active agent compound to selectively coat particles in the suspension and a sufficient amount of a
heteropolar compound to produce a stable froth;

passing the conditioned suspension through at least one gas flotation cell; and
recovering the encysted protozoa from the gas flotation cell.

20

22. The method of claim 21, further comprising:

adding a bleaching agent to the sporulated oocysts in an amount sufficient to
inactivate residual microorganisms and eliminate residual organic matter; and
bleaching the sporulated oocysts.

25

23. The method of claim 22, wherein the bleaching is conducted concurrently with the sporulation,
and the bleaching agent is hydrogen peroxide.

30

24. The method of claim 22, wherein the bleaching agent is sodium hypochlorite present in an
amount from about 5,000 to about 10,000 parts per million free available chlorine, ozone present in
an amount up to about 3% in air, or combinations thereof.

35

25. The method of claim 22, further comprising washing the bleached oocysts by cross-flow
membrane filtration to decrease the residual bleaching agent concentration to an acceptable level.

26. The method of claim 25, wherein the bleaching agent is sodium hypochlorite present after
washing in a concentration sufficient to suppress residual microbial growth, and the bleached and
washed oocyst suspension has a concentration from about 1×10^6 to about 2.5×10^6 oocysts/ml, a

maximum solids size of less than about 200 microns, and a sodium sulphate content of less than about 0.9 percent.

27. The method of claim 26 further comprising:

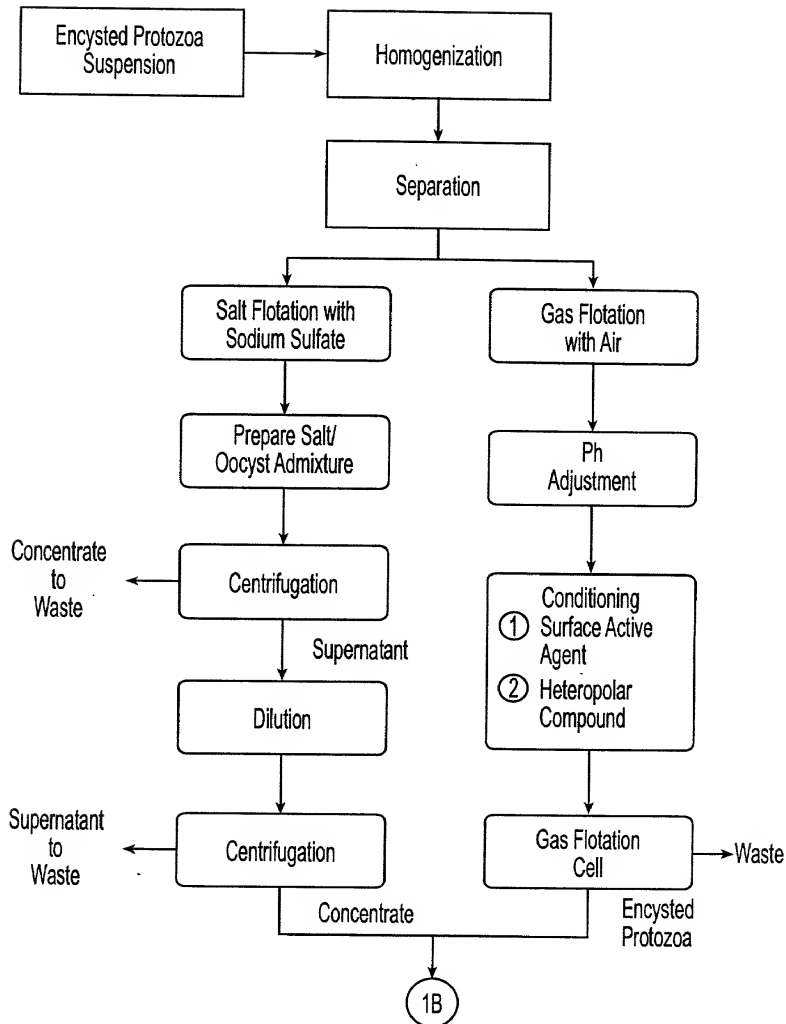
- 5 concentrating the bleached and washed oocysts into a sterile concentrate;
 combining sterile concentrates of one or more species of oocysts into a combined
concentrate; and
 packaging the combined concentrate under sterile conditions.

Method For The Purification, Recovery, And Sporulation Of Cysts And Oocysts

ABSTRACT

- 5 A vaccine for in ovo vaccination against avian coccidiosis produced by a method including obtaining the coccidial oocysts from a fecal suspension, homogenizing the fecal suspension, separating the oocysts from the fecal debris by either salt flotation using sodium sulfate or gas flotation using air, sporulating the oocysts using hydrogen peroxide and air sparging, bleaching the sporulated oocysts, washing the bleached oocysts, concentrating the sterile washed oocysts and combining the concentrates of various species of coccidial oocysts, and producing a
- 10 vaccine. The method in whole or in part can be applied to other kinds of encysted protozoa to produce vaccines for various types of animals.

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*Fig. 1A*

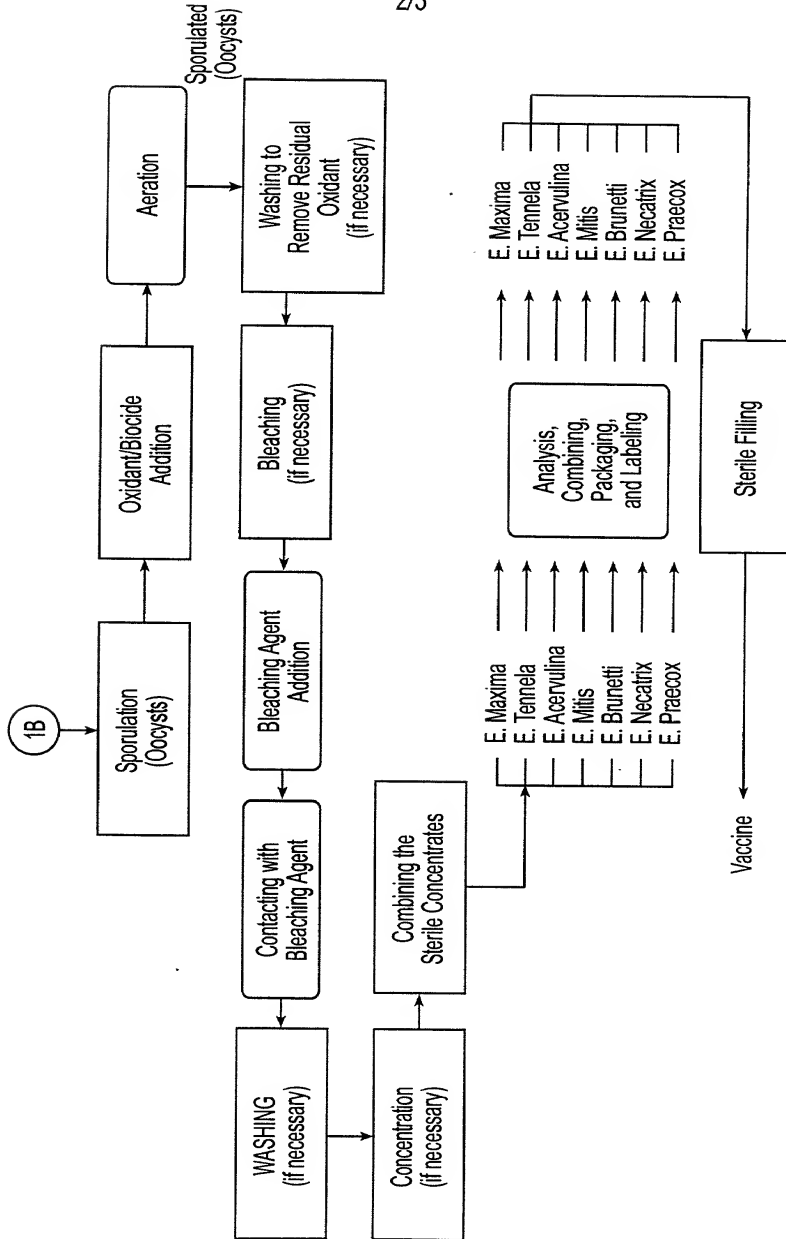
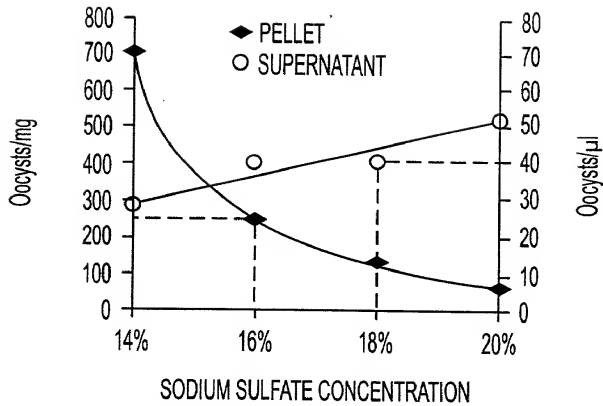
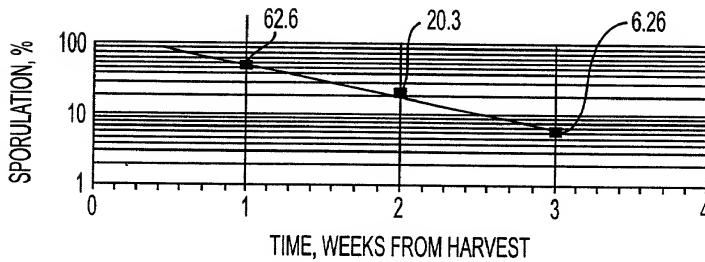


Fig. 1B

*Fig. 2**Fig. 3*

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required)	Attorney Docket Number	PC10433A
	First Named Inventor	Harold N. Conkle
	COMPLETE IF KNOWN	
	Application Number	09/701,760
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
	Group Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled.

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

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Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

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Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
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U.S. Parent Application Number or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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ADDITIONAL INVENTOR(S)
Supplemental Sheet

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Inventor's Signature	Date		
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
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	First Named Inventor	Harold N. Conkle
	COMPLETE IF KNOWN	
	Application Number	09/701,760
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
	Group Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

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(Title of the Invention)

☐ the specification of which
is attached hereto

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Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

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			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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U.S. Parent Application Number or PCT Parent Number

Parent Filing Date (MM/DD/YYYY)

Parent Patent Number (if applicable)

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J. Trevor Lumb	28,567	Bryan C. Ziellinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to:

☐ Customer Number
or Bar Code Label

OR

☒ Correspondence address below

Name Paul H. Ginsburg

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor.

Given Name (first and middle (if any))

Family Name or Surname

Harold N.

Conkle

Inventor's Signature

Date

Residence: City

Columbus

State

Ohio

Country

USA

Citizenship

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Post Office Address

Post Office Address

875 Kenridge Court

City

Columbus

State

OH

Zip

43220

Country

USA

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

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Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City		Camarillo	State	CA	Country	USA	Citizenship
Post Office Address							
Post Office Address		11675 Barranca Road					
City		Camarillo	State	CA	Zip	93012	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Scott J.				Blonigen			
Inventor's Signature						Date	
Residence: City		Hilliard	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		3325 River Narrows Road					
City		Hilliard	State	OH	Zip	43026	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature						Date	
Residence: City		Terre Haute	State	IN	Country	USA	Citizenship
Post Office Address							
Post Office Address		159 Phoenix Court					
City		Terre Haute	State	IN	Zip	47803	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
David R.				Kilanowski			
Inventor's Signature						Date	
Residence: City		Dublin	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		5783 Rushwood Drive					
City		Dublin	State	OH	Zip	43017	Country

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Please type a plus sign (+) inside this box →



Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Bruce				Monzyk			
Inventor's Signature						Date	
Residence: City		Delaware	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		7460 Blaney Road					
City		Delaware	State	OH	Zip	43015	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Timothy M				Werner			
Inventor's Signature						Date	
Residence: City		Traverse City	State	MI	Country	USA	Citizenship
Post Office Address							
Post Office Address		608 W 7th Street					
City		Traverse City	State	MI	Zip	49684	Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Chad M.				Cucksey			
Inventor's Signature						Date	
Residence: City		Columbus	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		1704 West 3rd Avenue					
City		Columbus	State	OH	Zip	43212	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Hamish A. I				McArthur			
Inventor's Signature						Date	
Residence: City		Mystic	State	CT	Country	USA	Citizenship
Post Office Address							
Post Office Address		202 Library Street					
City		Mystic	State	CT	Zip	06355	Country
						USA	

ADDITIONAL INVENTOR(S)
Supplemental Sheet

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required)		Attorney Docket Number	PC10433A
		First Named Inventor	Harold N. Conkle
		COMPLETE IF KNOWN	
		Application Number	09/701,760
		Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
		Group Art Unit	Not Yet Assigned
		Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which
☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
			<input type="checkbox"/>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.
60/122,160	2/26/99	

Please type a plus sign (+) inside this box →

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Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 156, which became available between the filing date of the prior application and the national or PCT international filing date or this application.

U.S. Parent Application Number or PCT Parent Number

Parent Filing Date (MM/DD/YYYY)

Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☐ Customer Number or

Place Customer Number Bar Code Label here

☒ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Peter C. Richardson	27,526	A. Dean Olson	31,185
Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,688
J. Trevor Lumb	28,567	Bryan C. Ziellinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
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Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

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10017-5755

Country United States Of America

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Fax

(212)573-1939

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Harold N.

Conkle

Inventor's Signature

Date

Residence: City

Columbus

State

Ohio

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

875 Kenridge Court

City

Columbus

State

OH

Zip

43220

Country

USA

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

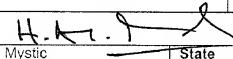
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City		Camarillo	State	CA	Country	USA	Citizenship
Post Office Address							
Post Office Address		11675 Barranca Road					
City		Camarillo	State	CA	Zip	93012	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Scott J.				Bionigen			
Inventor's Signature						Date	
Residence: City		Hillard	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		3325 River Narrows Road					
City		Hillard	State	OH	Zip	43026	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature						Date	
Residence: City		Terre Haute	State	IN	Country	USA	Citizenship
Post Office Address							
Post Office Address		159 Phoenix Court					
City		Terre Haute	State	IN	Zip	47803	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
David R.				Kilanowski			
Inventor's Signature						Date	
Residence: City		Dublin	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		5783 Rushwood Drive					
City		Dublin	State	OH	Zip	43017	Country

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DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Bruce				Monzyk			
Inventor's Signature						Date	
Residence: City		Delaware	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		7460 Blaney Road					
City		Delaware	State	OH	Zip	43015	Country
					USA		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Timothy M.				Werner			
Inventor's Signature						Date	
Residence: City		Traverse City	State	MI	Country	USA	Citizenship
Post Office Address							
Post Office Address		608 W. 7th Street					
City		Traverse City	State	MI	Zip	49684	Country
					USA		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Chad M.				Cucksey			
Inventor's Signature						Date	
Residence: City		Columbus	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		1704 West 3rd Avenue					
City		Columbus	State	OH	Zip	43212	Country
					USA		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Hamish A. I.				McArthur			
Inventor's Signature						Date	
Residence: City		Mystic	State	CT	Country	USA	Citizenship
Post Office Address							
Post Office Address		202 Library Street					
City		Mystic	State	CT	Zip	06355	Country
					USA		

0701767 044904

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])					Family Name or Surname					
Ted L.					Tewksbury					
Inventor's Signature							Date			
Residence: City		Columbus		State		OH	Country		USA	
Post Office Address		1309 Deerlick Drive								
Post Office Address										
City		Columbus	State		OH	Zip		43228	Country	US
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State			Country			
Post Office Address										
Post Office Address										
City			State			Zip			Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State			Country			
Post Office Address										
Post Office Address										
City			State			Zip			Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State			Country			
Post Office Address										
Post Office Address										
City			State			Zip			Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State			Country			
Post Office Address										
Post Office Address										
City			State			Zip			Country	

106140-0921250

Please type a plus sign (+) inside this box →



DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e) required)	Attorney Docket Number	PC10433A
	First Named Inventor	Harold N. Conkle
	COMPLETE IF KNOWN	
	Application Number	09/701,760
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
	Group Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned

RECEIVED
 30 APR 2001
 Legal Staff
 International Division

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if two or more names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which
☐ is attached hereto
 OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number: PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
			<input type="checkbox"/>	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto
60/122,160	2/26/99	

RECEIVED
 APR 26 2001
 JFWS

Please type a plus sign (+) inside this box →



Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 156, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number or PCT Parent Number

Parent Filing Date (MM/DD/YYYY)

Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith ☐ Customer Number or

Place Customer Number Bar Code Label here

☒ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Peter C. Richardson	27,526	A. Dean Olson	31,185
Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,688
J. Trevor Lumb	28,567	Bryan C. Zielinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Spaer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto

Direct all correspondence to:

☐ Customer Number or Bar Code Label

OR ☒ Correspondence address below

Name Paul H. Ginsburg

Address Pfizer Inc

Address 235 East 42nd Street, 20th Floor

City New York

State

New York

Zip Code

10017-5755

Country United States Of America

Telephone

(212)573-2369

Fax

(212)573-1939

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor.

Given Name (first and middle (if any))

Family Name or Surname

Harold N.

Conkle

Inventor's Signature

Date

Residence: City

Columbus

State

Ohio

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

875 Kennndge Court

City

Columbus

State

OH

Zip

43220

Country

USA

☒ Additional inventors are being named on the 3 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

Please type a plus sign (+) inside this box →



Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City	Camarillo	State	CA	Country	USA	Citizenship	USA
Post Office Address							
11675 Barranca Road							
City	Camarillo	State	CA	Zip	93012	Country	USA
Name of Additional Joint Inventor, if any:							
<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle [if any])				Family Name or Surname			
Scott J.				Blonigen			
Inventor's Signature						Date	
Residence: City	Hilliard	State	OH	Country	USA	Citizenship	USA
Post Office Address							
3325 River Narrows Road							
City	Hilliard	State	OH	Zip	43026	Country	USA
Name of Additional Joint Inventor, if any:							
<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle [if any])				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature						Date	
Residence: City	Terre Haute	State	IN	Country	USA	Citizenship	USA
Post Office Address							
159 Phoenix Court							
City	Terre Haute	State	IN	Zip	47803	Country	USA
Name of Additional Joint Inventor, if any:							
<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle [if any])				Family Name or Surname			
David R.				Kilanowski			
Inventor's Signature						Date	
Residence: City	Dublin	State	OH	Country	USA	Citizenship	USA
Post Office Address							
5783 Rushwood Drive							
City	Dublin	State	OH	Zip	43017	Country	

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+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])					Family Name or Surname						
Bruce					Monzyk						
Inventor's Signature							Date				
Residence: City		Delaware		State	OH	Country	USA	Citizenship		USA	
Post Office Address											
Post Office Address		7460 Blaney Road									
City		Delaware		State	OH	Zip	43015	Country	USA		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])					Family Name or Surname						
Timothy M.					Werner						
Inventor's Signature							Date				
Residence: City		Traverse City		State	MI	Country	USA	Citizenship		USA	
Post Office Address											
Post Office Address		808 W. 7th Street									
City		Traverse City		State	MI	Zip	49684	Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])					Family Name or Surname						
Chad M.					Cucksey						
Inventor's Signature		<i>Chad M. Cucksey</i>					Date		12/29/2000		
Residence: City		Columbus		State	OH	Country	USA	Citizenship		USA	
Post Office Address											
Post Office Address		1704 West 3rd Avenue									
City		Columbus		State	OH	Zip	43212	Country	USA		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])					Family Name or Surname						
Hamish A. I					McArthur						
Inventor's Signature							Date				
Residence: City		Mystic		State	CT	Country	USA	Citizenship		USA	
Post Office Address											
Post Office Address		202 Library Street									
City		Mystic		State	CT	Zip	06355	Country	USA		

Please type a plus sign (+) inside this box →



Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle (if any))					Family Name or Surname				
Ted L.					Tewksbury				
Inventor's Signature							Date		
Residence: City	Columbus	State	OH	Country	USA	Citizenship	USA		
Post Office Address									
1309 Deerlick Drive									
Post Office Address									
City	Columbus	State	OH	Zip	43228	Country	US		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle (if any))					Family Name or Surname				
Inventor's Signature							Date		
Residence: City		State		Country		Citizenship			
Post Office Address									
Post Office Address									
City		State		Zip		Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle (if any))					Family Name or Surname				
Inventor's Signature							Date		
Residence: City		State		Country		Citizenship			
Post Office Address									
Post Office Address									
City		State		Zip		Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor							
Given Name (first and middle (if any))					Family Name or Surname				
Inventor's Signature							Date		
Residence: City		State		Country		Citizenship			
Post Office Address									
Post Office Address									
City		State		Zip		Country			

2025 RELEASE UNDER E.O. 14176

19 APR 2001

Please type a plus sign (+) inside this box →

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)	Attorney Docket Number	PC10433A	
	First Named Inventor	Harold N. Conkle	
	COMPLETE IF KNOWN		
	Application Number	09/701,760	
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)	
	Group Art Unit	Not Yet Assigned	
<input checked="" type="checkbox"/> Declaration submitted with Initial Filing	<input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required)	Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which
☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.
60/122,160	2/26/99	

Please type a plus sign (+) inside this box →

Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 1.56, which became available between the filing date of the prior application and the national or PCT International filing date of this application.

U.S. Parent Application Number or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT International application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent

and Trademark Office connected therewith	<input type="checkbox"/> Customer Number or	Place Customer Number Bar Code Label here
	<input checked="" type="checkbox"/> Registered practitioner(s) name/registration number listed below	

Name	Registration Number	Name	Registration Number
Peter C. Richardson	27,526	A. Dean Olson	31,185
Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,688
J. Trevor Lumb	28,567	Bryan C. Zielinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	38,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kisport	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto

Direct all correspondence to:		<input type="checkbox"/> Customer Number or Bar Code Label	OR	<input checked="" type="checkbox"/> Correspondence address below
Name	Paul H. Ginsburg			
Address	Pfizer Inc			
Address	235 East 42nd Street, 20th Floor			
City	New York	State	New York	Zip Code 10017-5755
Country	United States Of America	Telephone	(212)573-2369	Fax (212)573-1939

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any])		Family Name or Surname	
Harold N.		Conkle	
Inventor's Signature	Date		
Residence: City	Columbus	State	Ohio
		Country	USA
Post Office Address			
Post Office Address	875 Kenridge Court		
City	Columbus	State	OH
	Zip	43220	Country USA

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City	Camarillo	State	CA	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 11675 Barranca Road							
City	Camarillo	State	CA	Zip	93012	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Scott J.				Blonigen			
Inventor's Signature						Date	
Residence: City	Hilliard	State	OH	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 3325 River Narrows Road							
City	Hilliard	State	OH	Zip	43026	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature						Date	
Residence: City	Terre Haute	State	IN	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 159 Phoenix Court							
City	Terre Haute	State	IN	Zip	47803	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
David R.				Klanowski			
Inventor's Signature						Date	
Residence: City	Dublin	State	OH	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 5783 Rushwood Drive							
City	Dublin	State	OH	Zip	43017	Country	

Please type a plus sign (+) inside this box →



Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Bruce				Monzyk			
Inventor's Signature						Date	
Residence: City	Delaware	State	OH	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 7460 Blaney Road							
City	Delaware	State	OH	Zip	43015	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Timothy M.				Werner			
Inventor's Signature	<i>Timothy M. Werner</i>					Date	12/27/00
Residence: City	Traverse City	State	MI	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 608 W. 7th Street							
City	Traverse City	State	MI	Zip	49684	Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Chad M.				Cucksey			
Inventor's Signature						Date	
Residence: City	Columbus	State	OH	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 1704 West 3rd Avenue							
City	Columbus	State	OH	Zip	43212	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Heinrich A. I				McArthur			
Inventor's Signature						Date	
Residence: City	Mystic	State	CT	Country	USA	Citizenship	USA
Post Office Address							
Post Office Address 202 Library Street							
City	Mystic	State	CT	Zip	06355	Country	USA

03701763 0047901

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office: U S. DEPARTMENT OF COMMERCE

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Ted L.				Tewksbury			
Inventor's Signature						Date	
Residence: City	Columbus	State	OH	Country	USA	Citizenship	USA
Post Office Address	1309 Deerlick Drive						
Post Office Address							
City	Columbus	State	OH	Zip	43228	Country	US
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		Zip		Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		Zip		Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		Zip		Country	

2025 RELEASE UNDER E.O. 14176

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office U S DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required)	Attorney Docket Number	PC10433A
	First Named Inventor	Harold N. Conkle
	COMPLETE IF KNOWN	
	Application Number	09/701,760
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
	Group Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

☐ the specification of which
is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below

Application Number(s)	Filing Date (MM/DD/YYYY)	
50/122,160	2/26/99	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 35(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 1.56, which became available between the filing date of the prior application and the national or PCT International filing date of this application.

U.S. Parent Application Number or PCT Parent Number**Parent Filing Date (MM/DD/YYYY)****Parent Patent Number (if applicable)**

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent

and Trademark Office connected therewith:

☐ Customer Number
or

Place Customer
Number Bar Code
Label here

☒ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Peter C. Richardson	27,526	A. Dean Olson	31,185
Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,688
J. Trevor Lumb	28,567	Bryan C. Zielinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to:

☐ Customer Number
or Bar Code Label

OR ☒ Correspondence address below

Name Paul H. Ginsburg

Address Pfizer Inc

Address 235 East 42nd Street, 20th Floor

City New York

State

New York

Zip Code

10017-5755

Country United States Of America

Telephone

(212)573-2369

Fax

(212)573-1939

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Harold N.

Conkle

Inventor's Signature

Date

Residence: City

Columbus

State

Ohio

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

875 Kenridge Court

City

Columbus

State

OH

Zip

43220

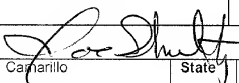
Country

USA

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City		Camarillo		State		CA	Country
						USA	Citizenship
							USA
Post Office Address							
11675 Barranca Road							
City		Camarillo	State	CA	Zip	93012	Country
							USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Scott J.				Blonigen			
Inventor's Signature						Date	
Residence: City		Hillard		State		OH	Country
						USA	Citizenship
							USA
Post Office Address							
3325 River Narrows Road							
City		Hillard	State	OH	Zip	43026	Country
							USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature						Date	
Residence: City		Terre Haute		State		IN	Country
						USA	Citizenship
							USA
Post Office Address							
159 Phoenix Court							
City		Terre Haute	State	IN	Zip	47803	Country
							USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
David R.				Klanowski			
Inventor's Signature						Date	
Residence: City		Dublin		State		OH	Country
						USA	Citizenship
							USA
Post Office Address							
5783 Rushwood Drive							
City		Dublin	State	OH	Zip	43017	Country

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Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Bruce				Monzyk			
Inventor's Signature						Date	
Residence: City		Delaware	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		7460 Blaney Road					
City		Delaware	State	OH	Zip	43015	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Timothy M.				Werner			
Inventor's Signature						Date	
Residence: City		Traverse City	State	MI	Country	USA	Citizenship
Post Office Address							
Post Office Address		608 W. 7th Street					
City		Traverse City	State	MI	Zip	49684	Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Chad M.				Cucksey			
Inventor's Signature						Date	
Residence: City		Columbus	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		1704 West 3rd Avenue					
City		Columbus	State	OH	Zip	43212	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Hamish A. I.				McArthur			
Inventor's Signature						Date	
Residence: City		Mystic	State	CT	Country	USA	Citizenship
Post Office Address							
Post Office Address		202 Library Street					
City		Mystic	State	CT	Zip	06355	Country
						USA	

Please type a plus sign (+) inside this box →



DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle (if any))					Family Name or Surname					
Ted L.					Tewksbury					
Inventor's Signature							Date			
Residence: City		Columbus		State	OH	Country		USA	Citizenship	USA
Post Office Address		1309 Deerlick Drive								
Post Office Address										
City		Columbus	State	OH	Zip	43228		Country	US	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle (if any))					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State		Country			Citizenship	
Post Office Address										
Post Office Address										
City			State		Zip			Country		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle (if any))					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State		Country			Citizenship	
Post Office Address										
Post Office Address										
City			State		Zip			Country		
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle (if any))					Family Name or Surname					
Inventor's Signature							Date			
Residence: City				State		Country			Citizenship	
Post Office Address										
Post Office Address										
City			State		Zip			Country		

1057440-0970269

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office, U S DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required)	Attorney Docket Number	PC10433A
	First Named Inventor	Harold N. Conkle
	COMPLETE IF KNOWN	
	Application Number	09/701,760
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
	Group Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled,

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the invention)

the specification of which
☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date (MM/DD/YYYY)	
60/122,160	2/26/99	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 156, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

☐ Customer Number
or

Place Customer
Number Bar Code
Label here

☒ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Peter C. Richardson	27,526	A. Dean Olson	31,185
Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,688
J. Trevor Lumb	28,567	Bryan C. Zielinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to:

☐ Customer Number
or Bar Code Label

OR ☒ Correspondence address below

Name	Paul H. Ginsburg				
Address	Pfizer Inc.				
Address	235 East 42nd Street, 20th Floor				
City	New York	State	New York	Zip Code	10017-5755
Country	United States Of America	Telephone	(212)573-2369	Fax	(212)573-1939

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor.

Given Name (first and middle [if any])		Family Name or Surname			
Harold N.		Conkle			
Inventor's Signature				Date	
Residence: City	Columbus	State	Ohio	Country	USA
Post Office Address					
Post Office Address	875 Kenridge Court				
City	Columbus	State	OH	Zip	43220
Country	USA				

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	---

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City	Camamilo	State	CA	Country	USA	Citizenship	USA
Post Office Address							
11675 Barranca Road							
City	Camamilo	State	CA	Zip	93012	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Scott J.				Blonigen			
Inventor's Signature	<i>Scott J. Blonigen</i>					Date	12/28/00
Residence: City	Hilliard	State	OH	Country	USA	Citizenship	USA
Post Office Address							
3325 River Narrows Road							
City	Hilliard	State	OH	Zip	43026	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature						Date	
Residence: City	Terre Haute	State	IN	Country	USA	Citizenship	USA
Post Office Address							
159 Phoenix Court							
City	Terre Haute	State	IN	Zip	47803	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
David R.				Kilianowski			
Inventor's Signature						Date	
Residence: City	Dublin	State	OH	Country	USA	Citizenship	USA
Post Office Address							
5783 Rushwood Drive							
City	Dublin	State	OH	Zip	43017	Country	

09/30/98 09:10:00

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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])						Family Name or Surname					
Bruce						Monzyk					
Inventor's Signature								Date			
Residence: City		Delaware		State		OH		Country		USA	
Post Office Address											
Post Office Address		7460 Blaney Road									
City		Delaware		State		OH		Zip		43015	
								Country		USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])						Family Name or Surname					
Timothy M.						Werner					
Inventor's Signature								Date			
Residence: City		Traverse City		State		MI		Country		USA	
Post Office Address											
Post Office Address		608 W. 7th Street									
City		Traverse City		State		MI		Zip		49684	
								Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])						Family Name or Surname					
Chad M.						Cucksey					
Inventor's Signature								Date			
Residence: City		Columbus		State		OH		Country		USA	
Post Office Address											
Post Office Address		1704 West 3rd Avenue									
City		Columbus		State		OH		Zip		43212	
								Country		USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor									
Given Name (first and middle [if any])						Family Name or Surname					
Hamish A. I						McArthur					
Inventor's Signature								Date			
Residence: City		Mystic		State		CT		Country		USA	
Post Office Address											
Post Office Address		202 Library Street									
City		Mystic		State		CT		Zip		06355	
								Country		USA	

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Ted L.

Tewksbury

Inventor's
Signature

Date

Residence: City

Columbus

State

OH

Country

USA

Citizenship

USA

Post Office Address

1309 Deerlick Drive

Post Office Address

City

Columbus

State

OH

Zip

43228

Country

US

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Inventor's
Signature

Date

Residence: City

State

Country

Citizenship

Post Office Address

Post Office Address

City

State

Zip

Country

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Inventor's
Signature

Date

Residence: City

State

Country

Citizenship

Post Office Address

Post Office Address

City

State

Zip

Country

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Inventor's
Signature

Date

Residence: City

State

Country

Citizenship

Post Office Address

Post Office Address

City

State

Zip

Country

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required	Attorney Docket Number	PC10433A
	First Named Inventor	Harold N. Conkle
	COMPLETE IF KNOWN	
	Application Number	09/701,760
	Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
	Group Art Unit	Not Yet Assigned
	Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.
60/122,160	2/26/99	

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 156, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number or PCT Parent Number

Parent Filing Date
(MM/DD/YYYY)Parent Patent Number
(if applicable)

☐ Additional U.S. or PCT International application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith ☐ Customer Number or

Place Customer
Number Bar Code
Label here☒ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Peter C. Richardson	27,526	A. Dean Olson	31,185
Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,888
J. Trevor Lumb	28,567	Bryan C. Zielinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to:

☐ Customer Number
or Bar Code LabelOR ☒ Correspondence address below

Name	Paul H. Ginsburg					
Address	Pfizer Inc					
Address	235 East 42nd Street, 20th Floor					
City	New York	State	New York	Zip Code	10017-5755	
Country	United States Of America	Telephone	(212)573-2369	Fax	(212)573-1939	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])				Family Name or Surname		
Harold N.				Conkle		
Inventor's Signature						Date
Residence: City	Columbus	State	Ohio	Country	USA	Citizenship
Post Office Address						
Post Office Address	875 Kenridge Court					
City	Columbus	State	OH	Zip	43220	Country
						USA

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Joseph E.

Schultz

Inventor's
Signature

Date

Residence: City

Camarillo

State

CA

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

11675 Barranca Road

City

Camarillo

State

CA

Zip

93012

Country

USA

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Scott J.

Blonigen

Inventor's
Signature

Date

Residence: City

Hilliard

State

OH

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

3325 River Narrows Road

City

Hilliard

State

OH

Zip

43026

Country

USA

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Fred H.

Weber

Inventor's
Signature

Date

Residence: City

Terre Haute

State

IN

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

159 Phoenix Court

City

Terre Haute

State

IN

Zip

47803

Country

USA

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

David R.

Kilanowski

Inventor's
Signature

Date

Residence: City

Dublin

State

OH

Country

USA

Citizenship

USA

Post Office Address

Post Office Address

5783 Rushwood Drive

City

Dublin

State

OH

Zip

43017

Country

2025-10-09 14:04:04

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Bruce				Monzyk			
Inventor's Signature						Date	
Residence: City	Delaware	State	OH	Country	USA	Citizenship	USA
Post Office Address							
7460 Blaney Road							
City	Delaware	State	OH	Zip	43015	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Timothy M				Werner			
Inventor's Signature						Date	
Residence: City	Traverse City	State	MI	Country	USA	Citizenship	USA
Post Office Address							
608 W 7th Street							
City	Traverse City	State	MI	Zip	49684	Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Chad M.				Cucksey			
Inventor's Signature						Date	
Residence: City	Columbus	State	OH	Country	USA	Citizenship	USA
Post Office Address							
1704 West 3rd Avenue							
City	Columbus	State	OH	Zip	43212	Country	USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Hamish A. I				McArthur			
Inventor's Signature						Date	
Residence: City	Mystic	State	CT	Country	USA	Citizenship	USA
Post Office Address							
202 Library Street							
City	Mystic	State	CT	Zip	06355	Country	USA

Please type a plus sign (+) inside this box -->

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	--

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])				Family Name or Surname						
Ted L.				Tewksbury						
Inventor's Signature						Date				
Residence: City		Columbus		State		OH	Country	USA	Citizenship	USA
Post Office Address		1309 Deerlick Drive								
Post Office Address										
City		Columbus		State		OH	Zip	43228	Country	US
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])				Family Name or Surname						
Inventor's Signature						Date				
Residence: City				State			Country		Citizenship	
Post Office Address										
Post Office Address										
City				State			Zip		Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])				Family Name or Surname						
Inventor's Signature						Date				
Residence: City				State			Country		Citizenship	
Post Office Address										
Post Office Address										
City				State			Zip		Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
Given Name (first and middle [if any])				Family Name or Surname						
Inventor's Signature						Date				
Residence: City				State			Country		Citizenship	
Post Office Address										
Post Office Address										
City				State			Zip		Country	

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100140 09210220

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office U S DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge 37 CFR 1.16 (e)) required)		Attorney Docket Number	PC10433A
		First Named Inventor	Harold N. Conkle
		COMPLETE IF KNOWN	
		Application Number	09/701,760
		Filing Date	November 30, 2000 (USA) February 25, 2000 (PCT)
		Group Art Unit	Not Yet Assigned
		Examiner Name	Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 02/25/2000 as PCT International

Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

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Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.
60/122,160	2/26/99	

Please type a plus sign (+) inside this box →

+

Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

DECLARATION ---- Utility or Design Patent Application

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U.S. Parent Application Number or PCT Parent Number
Parent Filing Date (MM/DD/YYYY)
Parent Patent Number (if applicable)
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Place Customer Number Bar Code Label here

☒ Registered practitioner(s) name/registration number listed below

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J. Trevor Lumb	28,567	Bryan C. Zielinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Cari J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto

Direct all correspondence to:

☐ Customer Number or Bar Code Label

 OR ☒ Correspondence address below

Name	Paul H. Ginsburg				
Address	Pfizer Inc				
Address	235 East 42nd Street, 20th Floor				
City	New York	State	New York	Zip Code	10017-5755
Country	United States Of America	Telephone	(212)573-2369	Fax	(212)573-1939

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))			Family Name or Surname		
Harold N.			Conkle		
Inventor's Signature					Date
Residence: City	Columbus	State	Ohio	Country	USA
Post Office Address					
Post Office Address	875 Kenridge Court				
City	Columbus	State	OH	Zip	43220
				Country	USA

☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	---

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Joseph E.				Schultz			
Inventor's Signature						Date	
Residence: City		Camarillo	State	CA	Country	USA	Citizenship
Post Office Address							
Post Office Address		11675 Barranca Road					
City		Camarillo	State	CA	Zip	93012	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Scott J.				Blonigen			
Inventor's Signature						Date	
Residence: City		Hilliard	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		3325 River Narrows Road					
City		Hilliard	State	OH	Zip	43026	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Fred H.				Weber			
Inventor's Signature		<i>Fred H. Weber</i>				Date	
Residence: City		Terre Haute	State	IN	Country	USA	Citizenship
Post Office Address							
Post Office Address		159 Phoenix Court					
City		Terre Haute	State	IN	Zip	47803	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
David R.				Kilanowski			
Inventor's Signature						Date	
Residence: City		Dublin	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		5783 Rushwood Drive					
City		Dublin	State	OH	Zip	43017	Country

0370960-044904

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Bruce				Monzyk			
Inventor's Signature						Date	
Residence: City		Delaware	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		7460 Blaney Road					
City		Delaware	State	OH	Zip	43015	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Timothy M				Werner			
Inventor's Signature						Date	
Residence: City		Traverse City	State	MI	Country	USA	Citizenship
Post Office Address							
Post Office Address		608 W. 7th Street					
City		Traverse City	State	MI	Zip	49684	Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Chad M.				Cucksey			
Inventor's Signature						Date	
Residence: City		Columbus	State	OH	Country	USA	Citizenship
Post Office Address							
Post Office Address		1704 West 3rd Avenue					
City		Columbus	State	OH	Zip	43212	Country
						USA	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Hamish A. I.				McArthur			
Inventor's Signature						Date	
Residence: City		Mystic	State	CT	Country	USA	Citizenship
Post Office Address							
Post Office Address		202 Library Street					
City		Mystic	State	CT	Zip	06355	Country
						USA	

Please type a plus sign (+) inside this box →

+

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
--------------------	---

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Ted L.				Tewksbury			
Inventor's Signature						Date	
Residence: City		Columbus		State OH		Country USA	
Post Office Address		1309 Deerlick Drive					
Post Office Address							
City		Columbus		State OH		Zip 43228	
				Country		US	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City				State		Country	
Post Office Address							
Post Office Address							
City				State		Zip	
				Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City				State		Country	
Post Office Address							
Post Office Address							
City				State		Zip	
				Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City				State		Country	
Post Office Address							
Post Office Address							
City				State		Zip	
				Country			
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City				State		Country	
Post Office Address							
Post Office Address							
City				State		Zip	
				Country			

2025 RELEASE UNDER E.O. 14176

Please type a plus sign (+) inside this box →



Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

☒ Declaration
submitted
with Initial
Filing

☐ Declaration
Submitted after Initial
Filing (surcharge
37 CFR 1.16 (e))
required)

Attorney Docket Number

PC10433A

First Named Inventor

Harold N. Conkle

COMPLETE IF KNOWN**Application Number**

09/701,760

Filing DateNovember 30, 2000 (USA)
February 25, 2000 (PCT)**Group Art Unit**

Not Yet Assigned

Examiner Name

Not Yet Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR THE PURIFICATION, RECOVERY, AND SPORULATION OF CYSTS AND OOCYSTS

(Title of the Invention)

the specification of which
☐ is attached hereto

OR

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Application Number PCT/US00/04733 and was amended on (MM/DD/YYYY) (if applicable)

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			<input type="checkbox"/>	YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B sheet attached hereto.
60/122,160	2/26/99	

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Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 U.S.C. 156, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith

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or

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☒ Registered practitioner(s) name/registration number listed below

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Allen J. Spiegel	25,749	Mervin E. Brokke	32,723
Paul H. Ginsburg	28,718	Valerie M. Fedowich	33,688
J. Trevor Lumb	28,567	Bryan C. Ziellinski	34,462
James T. Jones	30,561	Robert T. Ronau	36,257
Gregg C. Benson	30,977	B. Timothy Creagan	39,156
Robert F. Sheyka	31,304	Alan L. Koller	37,371
Grover F. Fuller Jr.	31,760	Jolene W. Appleman	35,428
Karen DeBenedictis	32,977	Kristina L. Konstas	37,864
Lorraine B. Ling	35,251	Seth H. Jacobs	32,140
Garth Butterfield	36,997	Martha A. Gammill	31,820
Carl J. Goddard	39,203	Gregory P. Raymer	36,647
Raymond M. Speer	26,810	E. Victor Donahue	35,492
Jennifer A. Kispert	40,049	Roy F. Waldron	42,208
Israel Nissenbaum	27,582	Todd M. Crissey	37,807
Adrian G. Looney	41,406	Deborah A. Martin	44,222
A. David Joran	37,858	Jeffrey N. Myers	41,213
Lawrence C. Akers	28,587	Elsa Djuardi	45,963
Gabriel L. Kleiman	40,681	Michelle A. Sherwood	36,271
Donna R. Grossu	P-47,248	Arlene K. Musser	37,895

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: <input type="checkbox"/> A petition has been filed for this unsigned inventor	
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☒ Additional inventors are being named on the 3 a supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
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Scott J.				Blonigen						
Inventor's Signature						Date				
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor								
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Fred H.				Weber						
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DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
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Name of Additional Joint Inventor, if any: <input type="checkbox"/> A petition has been filed for this unsigned inventor									
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Name of Additional Joint Inventor, if any: <input type="checkbox"/> A petition has been filed for this unsigned inventor									
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Hamish A. I.					McArthur				
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DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
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Inventor's Signature						Date	
Residence: City			State		Country		Citizenship
Post Office Address							
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City			State		Zip		Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Family Name or Surname			
Inventor's Signature						Date	
Residence: City			State		Country		Citizenship
Post Office Address							
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
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